

Commonwealth of Kentucky
Division for Air Quality
FINAL PERMIT STATEMENT OF BASIS

CONDITIONAL MAJOR FINAL NO. F-05-005
A. O. SMITH WATER PRODUCTS COMPANY
KENTON, KENTUCKY
January 9, 2006
BABAK FAKHARPOUR, PERMIT REVIEWER
AFS I.D.# 21-117-00140
Application Log # 50713

SOURCE DESCRIPTION:

A. O. Smith manufactures various types of glass frit for ceramic coatings. This facility consists of four (4) silos with dust collectors for raw material storage, four (4) continuous smelters, one batch smelter, a laboratory grit blaster, two (2) laboratory smelters, and three (3) ball mills. Control includes a venturi scrubber, a condensing column, and a high energy venturi scrubber for each pair of the four (4) continuous smelters, a jet venturi scrubber for the batch rotary smelter, and four baghouses for the unloading and weighing, and laboratory grit blaster. Raw materials are weighed by formula into specific poundage and blended into a homogeneous mixture. After blending, batch is augered into smelters and melted using natural gas at temperatures ranging between 1,950 degrees Fahrenheit and 3,000 degrees. Material is quenched, dried and packaged after exiting smelter. The source has submitted information on these facilities and has requested to become a conditional major.

A preliminary determination was made to approve the permit and public notice was placed in THE Enquirer in Florence, Kentucky on June 7, 2005. The comment period expired on July 7, 2005 and no comments were received.

Note: Administrative changes have been made to sections F, and G of the final permit, to reflect the current applicable regulation and regulation number. Also, upon review and discussion of the draft permit documents; the Division has made some clarification and corrections to the Statement of Basis Source Description and Credible Evidence sections.

COMMENTS:

APPLICABLE REGULATIONS:

401 KAR 59:010, New process operations.
401 KAR 52:030, Federally-enforceable permits for non-major sources.
401 KAR 63:010, Fugitives emissions.
401 KAR 63:021, Existing sources emitting toxic air pollutants.

Emission factors came from appropriate sections of AP 42, and MSDS.

All silos were installed in 1984. Therefore, 401 KAR 59:010, New process operations, applicable to

each emission units which commenced construction on or after July 2, 1975.

Emissions from the smelting operation are subject to 401 KAR 59:010, New process operations. The particulate matter emission from this process shall not exceed $3.59 P^{0.62}$ lb/hr where P is the process weight in tons/hour; nor visibility of 20% opacity or greater. To preclude Title V, A.O. Smith requests operating and emission limitation to restrict the plantwide PM₁₀, and NO_x emission rates to be less than 90 tons per year. Also to preclude Title V applicability, the emissions of combined hazardous air pollutants shall not exceed 22.5 tons per year, and the emissions of individual hazardous air pollutants shall not exceed 9 tons per year.

40 CFR Part 60, Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants is not applicable per U.S. Environmental Protection Agency Applicability Determination Index control numbers 9800042, 0200088, and a letter dated December 14, 2004 from Beverly H. Banister to Heather Abrams of Georgia Department of Natural Resources. The determination was based on similarities between glass and frit, which both are manufactured from nonmetallic minerals and yet are not considered chemically equivalent to any of the nonmetallic minerals specified in Subpart OOO. A “nonmetallic mineral processing plant” is defined in the standard as any combination of equipment that is used to crush or grind any of the nonmetallic minerals identified in the standard. A.O Smith uses a ball mill to grind the frit along with pulverized silica, pulverized clay, and other additives. Frit is the only material, which is grinded; Therefore NSPS Subpart OOO does not apply to this process.

EMISSION AND OPERATING CAPS DESCRIPTION:

1. Emissions of PM/PM₁₀, and NO_x shall not exceed 90 tons per year based on a 12 month rolling total for the entire source to preclude a major source Title V review.
2. Hazardous air pollutants (HAPs) emissions shall not exceed 9 tons per year individually and 22.5 tons per year combined based on a rolling 12 month total for the entire source to preclude a major source Title V review.

CREDIBLE EVIDENCE:

This permit contains provisions, which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.